

DETAILED ACTION

Inventorship

1. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Allowable Subject Matter

2. Claims 1-14 are allowed.
3. The drawings filed on April 18, 2006 are acceptable.

Reasons for Allowance

4. The following is an examiner's statement of reasons for allowance:

The prior art fails to disclose or render obvious the claimed combination including an ignition timing calculator for adding a fluctuating component to a set ignition timing to calculate a final ignition timing for igniting the engine; a mean effective pressure calculator for calculating an

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indicated mean effective pressure for an in-cylinder pressure detected when the engine has been ignited according to the final ignition timing; an MBT calculator for estimating an ignition timing characteristic curve that represents a correlation between the indicated mean effective pressure and the fluctuating component and for determining an optimum ignition timing from the characteristic curve; and a controller for controlling the set ignition timing to converge to the optimum ignition timing.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Johnny H. Hoang whose telephone number is (571) 272-4843.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen K. Cronin can be reached on (571) 272-4536. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private

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PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JHH
June 2, 2008

Johnny H. Hoang
Examiner
Art Unit 3747

/ Willis R. Wolfe, Jr. /
Willis R. Wolfe, Jr.
Primary Examiner
Art Unit 3747